

## HIGH DATA RATE WRITE HEAD

### ABSTRACT OF THE DISCLOSURE

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A magnetic head assembly includes first and second pole pieces and first and second coil layers wherein the second pole piece has a ferromagnetic pole tip which forms a portion of an air bearing surface and defines a track width of a write head. A write gap layer is located between the first pole piece and the pole tip. A dielectric first insulation layer interfaces first and second side surfaces of the pole tip and is located between the first and second coil layers. The second pole piece has a ferromagnetic second pole piece structure which is magnetically connected to each of the pole tip and the first pole piece and extends across the second coil layer. In a first embodiment the second pole piece structure is a single layer and in a second embodiment the second pole piece structure has front and back components with a flat laminated second pole piece yoke layer located therebetween.

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